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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,726	09/09/2003	Melissa Jane Buco	YOR920030132US1	2799
35526 7590 03/31/2008				
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ZHE, MENG YAO				
ART UNIT		PAPER NUMBER		
2195				
MAIL DATE		DELIVERY MODE		
03/31/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/658,726

Applicant(s)

BUCO ET AL.

Examiner

MENG YAO ZHE

Art Unit

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 7-11, 13, 14 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7-11, 13, 14 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1,7-11,13,14 and 20-24 are presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1,7-11,13,14 and 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim languages are unclear and indefinite:

- i) Claim 1, line 8, it is uncertain what each problem instance variant is <i.e. What is the problem? When to assign the next start time? Or When next event might occur? How is a potential next event related to the tasks? Is it a problem of when the next task might come in? The relationship of "problem instance variant" with other nouns such as next event or tasks need to be defined.>.

It is uncertain what "reserving a first amount of time" of line 15 consists of <i.e. is it reserving a think time partition within a slot? Basically, how is this time related to the time slot and think time partitions within each slot?>

Lines 18-19, it is uncertain what resources are for <i.e. are resources allocated for a problem instant? Or is it also allocated to a task like in line 2?>.

Line 21, it is uncertain what a preliminary solution is <i.e. If it's a solution to the problem instance variant, then what does it contain? What does it do? How is it related to task scheduling?>

Line 26, it is unclear by what standard a solution is considered to be better than the previous.

Line 28, if "assigning resources for queued tasks" are based on "actual next events", then it is uncertain why the algorithms are needed in the first place. Furthermore, it is unclear how each solution is used for task scheduling.

Claims 13 and 14 have the same deficiencies as claim 1 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,7-11,13,14 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over To Schedule of to Execute: Decision Support and Performance

Implications, by Hamidzadeh, Atif, and Ramamritham, Copy Right, 1999 (hereafter Atif) in view of Baker et al. Pub. No. US 2005/0065826, 3/24/2005 (hereafter Baker).

6. Atif and Baker were cited in the previous office action.

7. As per claims 1, 13, 14, Atif teaches a method, in a data processing system, for resource allocation of a plurality of tasks carrying penalties based on their completion time, the method comprising:

assigning the plurality tasks to one or more resources (Pg 155, Section 1, Introduction, lines 1-2; Pg 159, lines 9-11) ;

assigning start times for the plurality of tasks such that expected penalties for completion times of the plurality of tasks are minimized, wherein the expected penalties are minimized by repeatedly assigning tasks and reevaluating start times for the plurality of tasks based on a plurality of predictable potential next events (Pg 158, section 2, lines 1-10);

allocating thinking think time for each problem instance variant of the plurality of predictable potential next events into separate think time partitions within each time slot for determining a best solution for each problem instance variant of the plurality of the predictable potential next events, wherein an amount of think time is calculated for each problem instance variant of the plurality of the predictable potential next events, wherein each time slot is divided into a plurality of separate think time partitions (Fig 3 (a) a slot Q, which is the scheduling phase, is divided into think partitions such as the partition

starting with time unit 5 and ends at time unit 6; Pg 157, lines 16-19, lines 32-35;

Section 3.2 Scheduling Phase, lines 1-7; Section 3.4 Allocation and Control of Scheduling Time, lines 1-11; Fig 3);

reserving a first amount of time for performing an initial iteration of a scheduling phase (Pg 164, section 3.2, lines 18-23)

allocating a second amount of time for performing a backtrack algorithm (Pg 164, section 3.2, lines 25-27).

repeatedly executing the backtrack algorithm until an event occurs or the second amount of time expires (Pg 164, section 3.2, lines 24-27; Pg 165, lines 1-3).

Atif does not specifically teach an initial algorithm and a randomized algorithm and wherein allocating think time for each problem instance variant of the plurality of predictable potential next events includes: reserving a first amount of time for performing the initial algorithm allocating a second amount of time for performing the randomized algorithm, wherein the randomized algorithm is a next algorithm during each allocated think time partition, allocating resources for a problem instance variant of a predicted next event at a predicted time at which the predicted next event may occur, wherein allocating the resources for the problem instance variant of the predicted next event includes: executing the initial algorithm to form a preliminary solution; recording a seed value of zero to indicate that a current solution is the preliminary solution; and repeatedly executing the randomized algorithm until an event occurs or the second amount of time expires; responsive to the randomized algorithm forming a solution that is better than a previous solution, updating the seed value, assigning resources for

queued tasks based upon an actual next event and an actual time of occurrence, wherein assigning the resources for the queued tasks includes: executing an algorithm that produced the best solution and assigning the resources based on results of the algorithm, wherein the algorithm is one of the initial algorithm and the randomized algorithm.

However, Baker teaches an initial algorithm (Abstract, lines 9-10) and randomized algorithm (Para 52, lines 16-22, lines 41-43) and furthermore, Baker teaches

wherein allocating think time for each problem instance variant of the plurality of predictable potential next events includes:

reserving a first amount of time for performing an initial algorithm (Abstract, lines 9-10)

allocating a second amount of time for performing a randomized algorithm, wherein the randomized algorithm is a next algorithm (Para 52, lines 16-22, lines 41-43);

during each allocated think time partition, allocating resources for a problem instance variant of a predicted next event at a predicted time at which the predicted next event may occur, wherein allocating the resources for the problem instance variant of the predicted next event includes:

allocating resources for a predicted next event at a predicted time at which the predicted next event may occur includes: executing the initial algorithm to form a preliminary solution; and repeatedly executing the randomized algorithm until an event

occurs or the second amount of time expires. (*Baker, Para 52, lines 1-3, lines 16-22, 34-43*)

responsive to the randomized algorithm forming a solution that is better than a previous solution, updating the seed value (Para 52, lines 1-3).

assigning resources for queued tasks based upon an actual next event and an actual time of occurrence, wherein assigning the resources for the queued tasks includes:

executing an algorithm that produced the best solution and assigning the resources based on results of the algorithm, wherein the algorithm is one of the initial algorithm and the randomized algorithm (Para 16 and Para 17, lines 1-2; Para 21).

Baker teaches all of the above for the purpose of having two different algorithms to use to optimize job scheduling.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the invention of Atif with reserving a first amount of time for performing an initial algorithm and allocating a second amount of time for performing a randomized algorithm, as taught by Baker, because it allows the system to have two different algorithms to use to optimize job scheduling.

Baker is silent to the recording of a seed value of zero to indicate the current solution as a preliminary solution.

However, to record a value zero as a mere indicator of a starting point would have been obvious to one of ordinary skill in the computer programming art as it is

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recognized in the art to use any type of indicator to signify a starting point, as long as it is recognized by the system itself based on its protocol.

8. As per claims 7 and 20, Baker teaches wherein the step of assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes:

determining whether a best solution was found using the initial algorithm or the randomized algorithm; (*Para 16 and Para 17, lines 1-2*)

responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm for the purpose of having at least one algorithm to perform the optimization. (*Para 16 and Para 17, lines 1-2; Para 21*)

9. As per claims 8 and 21, Baker teaches responsive to the best solution being found using the randomized algorithm, executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm for the purpose of having at least one algorithm to perform the optimization. (*Para 16 and Para 17, lines 1-2; Para 19, lines 1-3; Para 21*)

10. As per claims 9 and 22, Baker teaches assigning only immediately starting tasks (Para 17).

11. As per claims 10 and 23, Atif teaches wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request (Pg 158, section 2, lines 8-10).

12. As per claims 11 and 24, Atif teaches wherein a job includes one or more task (Pg 158, section 2, lines 8-10: a task corresponds to a task).

Response to Arguments

13. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MENG YAO ZHE whose telephone number is (571)272-6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lewis A. Bullock, Jr./
Supervisory Patent Examiner, Art Unit 2193